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Cover: Whales perform an elaborate arrangement of clicks and calls to communicate with each other and navigate the vast oceans. Researchers are trying to understand these mysterious noises, in part to determine how underwater human activities might interfere with them. Shown here, a female killer whale breaching in Johnstone Strait, British Columbia. (Photo: Lance Barrett-Lennard)
- 332 Growing Up in Harm's Way

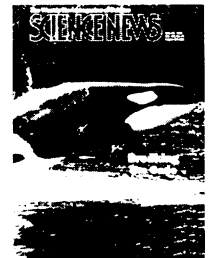
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Science Service, which publishes SCIENCE NEWS, is a nonprofit corporation founded in 1921 to increase the public understanding of science. Through its youth programs, it administers the International Science and Engineering Fair and the Science Talent Search for the Westinghouse science scholarships.

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## Letters

### Pesticide protests

You did a disservice to those of us concerned with environmental issues when you presented us with a cover showing an albino chick with a severely deformed lower mandible that "may trace" to pollutants ("The Pesticide Shuffle," SN: 3/16/96, p. 174). This deformity could easily have been a mutation totally unrelated to pesticides or an injury received in a predatory attack.

There is enough environmental hysteria out here without your adding to it.

Jess E. Moore  
Midland, Texas

Is it really suitable for a nation whose major food-related problem is obesity to sit in judgment on the crop protection practices of a nation whose main food-related problems are malnutrition and starvation? Will a worldwide ban on all non-U.S.-registered pes-

ticides reduce world misery or increase it? Is it fair to ban a material protecting a population from diseases simply because we in the United States do not suffer from those same diseases?

Allen C. Scoggan  
Aurora, Colo.

You fully document all the pesticides escaping the United States but totally fail to mention the benefits of these pesticides around the world.

When DDT was being widely used throughout the world in the early 1970s, malaria was brought under control. Today, despite DDT's never having been proven to be a human carcinogen, its absence on the world market has allowed malaria to claim millions of lives each year for the past decade.

Jay Lehr  
Senior Scientist  
Environmental Education Enterprises  
Columbus, Ohio

### Auto companies took lead in tests

"Virtual crash-test dummy" (SN: 3/2/96, p. 138) implies that technologists at Los Alamos invented the idea of using a computer system to simulate crash tests. Computer crashworthiness simulations have been done for more than 10 years by automobile companies around the world.

Many commercial companies have also been developing and using humanlike models. I am glad that Los Alamos is joining this worthy endeavor, but please give some credit to the private sector for being there first.

Stephen R. Behling  
Cray Research  
Eagan, Minn.

### Limitations of UV light

Regarding "Safer water for poorer nations" (SN: 3/2/96, p. 138), ultraviolet light is a well-known purifier of water. However, the ability

Letters continued on p.331

## CFC smuggling threatens ozone recovery

On Jan. 1, U.S. manufacturers ceased production of chlorofluorocarbons (CFCs) for domestic consumption in all but a few "essential" uses, such as rocket motor manufacturing. This near-phaseout of CFCs, called for by the Montreal Protocol (SN: 10/7/95, p. 238) to safeguard Earth's protective ozone layer, was supposed to mark the end of most U.S. demand for the potent, ozone-destroying pollutants. In fact, however, demand in the United States remains strong and is being satisfied by a thriving black market, according to a study published last week by the Royal Institute for International Affairs in London.

The growing illegal trade in these substances "clearly threatens the integrity of the phaseout schedules [under the Montreal Protocol] and the rate of recovery of the ozone layer," concludes Duncan Brack, author of the report.

Currently, CFCs appear to be "the second most lucrative commodity smuggled through Miami, exceeded in value only by cocaine," Brack says. A major contributor to the U.S. demand, estimated at more than 20 million pounds annually, are some 100 million automotive air conditioners that depend on CFC refrigerants—and that periodically need repair. The CFC is purchased for repair shops by buyers who may not be aware that the material was imported illegally.

The illegal trade in CFCs is brisk elsewhere, too. Brack reports that up to 20 percent of all CFCs in use late last year may stem from illegal trading, including those used to repair "up to one-third of all air-conditioning and refrigerating equipment in the United Kingdom." The 2.8 million pounds of CFCs confiscated in Taiwan in 1994 may represent just 10 percent of what is being smuggled into that country, his report notes.

Although China and India have supplied some black market CFCs, Brack finds that Russia and its former republics are "a significant source of most of the illegally traded materials."

His research indicates that Russian plants may be producing 60 million pounds a year more than they are reporting to the United Nations.

Not only has the Russian government taken little action to limit overproduction by these plants, Brack says, but the hard currency available for CFCs on the black market poses "a major temptation in an economy undergoing such dramatic convulsions."

## ITA? Déjà vu of OTA

Three months after the congressional Office of Technology Assessment (OTA) mailed out its final reports, a small group of its alumni received their first grant—\$50,000 from an anonymous donor—to pick up where the abolished research agency had left off. This new Institute for Technology Analysis (ITA) in Washington, D.C., expects to be leaner than its predecessor (SN: 10/28/95, p. 286) and more catholic in its clientele. Whereas OTA had worked solely for Congress, ITA plans to analyze issues for industry, professional societies, and federal agencies.

Vary Coates, the president of ITA, and several other former OTA analysts met with potential clients over the past 6 months to identify likely projects, including one on digital cash, and to outline plans for studying them. The institute could launch several projects as soon as it locks in some additional financial sponsors for them, Coates says.

Following OTA's precedent, ITA intends to investigate problems and policy options through workshops at which all vested parties are represented. Owing to ITA's smaller budget, however, Coates anticipates that there will be fewer workshops per project and that final reports will run 50 pages or less, a fraction of the length of the average OTA tome.

The entire library of OTA reports—all 750 or so, which span 23 years and run more than 100,000 pages—has just become available as a boxed set of five CD-ROMs from the Government Printing Office in Washington, D.C., for \$23.

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of an ultraviolet unit to disinfect water depends to a large extent on the clarity of the water being treated, as well as on the depth of the water sheet.

A number of manufacturers have been involved in the development of UV units and, together with the National Sanitation Foundation (NSF), have put together NSF standard 55. As of Feb. 1, 1995, only two companies had submitted units for testing under that standard and were accepted for listing and the use of the NSF seal.

I hope Ashok Gadgil is aware of the standard and has tested his unit. Copies of standard 55 may be obtained from: NSF International, P.O. Box 130140, Ann Arbor, Mich. 48113-0140.

I doubt that a complete system would function at the low cost estimated by Gadgil.

Louis M. Kuh  
Stamford, Conn.

I admire Gadgil's innovative solution for contaminated water sources, but I would caution that UV has poor penetrating power if the organisms (either bacterial or viral) are clumped to any degree. Either very pure, particulate-free water must be used as the source, or adequate filtration must precede the UV treatment.

Robert J. Hosley  
Bozeman, Mont.

## Go figure!

Clarence Annett (Letters, SN: 3/16/96, p. 163) expresses the problem with boat-tailed artillery very well, but not that with the XB-70. The crash of the XB-70 at Edwards Air Force Base in California was not caused by instability. A chase aircraft hit the rear of the craft after being caught in the XB-70's vortex. One crew member survived.

Philip N. French  
Lt. Col. USAF, Ret.  
Suitland, Md.

The XB-70 did not stall, nor did it invert until being struck. The plane was, however, unstable. The delta wing design of the first prototype initially produced vibrations of such intensity that paint was stripped from large areas of the fuselage.

Mark E. North  
Germantown, Md.

The XB-70 was a complete success as an extremely high speed bomber. It used an aerodynamic principle called compression lift to attain those speeds. It was canceled because of its exorbitant cost and advances in pilotless, high-speed delivery systems, not instability.

Albert V. Secen Jr.  
Gaithersburg, Md.

Far from rejecting the use of boat-tailed (not "bobtail") bullets, the Army adopted

them and uses them to this day. Moreover, it is not true that boat-tailed bullets are inherently inaccurate because of their shape. Virtually all current U.S. small-bore target-shooting records were set with boat-tailed bullets. The major cause of wobbly bullet flight is an off-center lead core, not the shape of the bullet.

Jeff Del Col  
Philippi, W.Va.

## U.S. pesticide problems

Of special interest in the informative report "Pesticides may challenge human immunity" (SN: 3/9/96, p. 149) was Albert Munson's comment that "current U.S. requirements for testing the immunotoxicity of pesticides are essentially worthless."

Prominent toxicologists like Sweden's Bjorn Ekwall have long criticized reliance upon effects on nonhuman species to predict human responses to a particular substance. Differences between species in absorption, distribution, metabolism, and elimination render responses in one species unpredictable for another. Mice, the most commonly used laboratory animals, tend to eliminate chemicals within a span of 3 hours, compared to 72 hours for humans.

The lingering reliance upon animal data, while ignoring obvious effects in exposed workers, delays corrective measures.

Bina Robinson  
Swain, N.Y.